Transportation System Performance Measures in California

California Council of Governments

January 20, 2000

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Transportation System Information Program

Presentation Summary

- Project background
- Project status
- Application to regional transportation plans
- Where are we going

Project Background

Why Performance Measures?

- Performance of transportation systems affects quality of life and economic growth.
- USDOT pushing for performance measures.
- Senate Bill 45 requires consideration at the STIP level.
- Regional Transportation Plan guidelines suggest performance measures.
- Public interest in transportation system performance increasing.

Project Background

Performance Measures are:

- Tools of standard management practice.
- Tools to help understand how the system operates.
- Tools to help develop information needed by decision makers.
- Tools to help develop understandable and relevant information for users of the transportation system.

Project Background

Chronology of the Caltrans' Performance Measures project?

- Initially a module of the 1997 California transportation plan.
- Three phases: design, testing and incremental deployment
- External and internal technical advisory groups
- Simple framework and use existing data as much as possible.
- Focus on initial nine outcome oriented performance measures.
- Preliminary results now available.

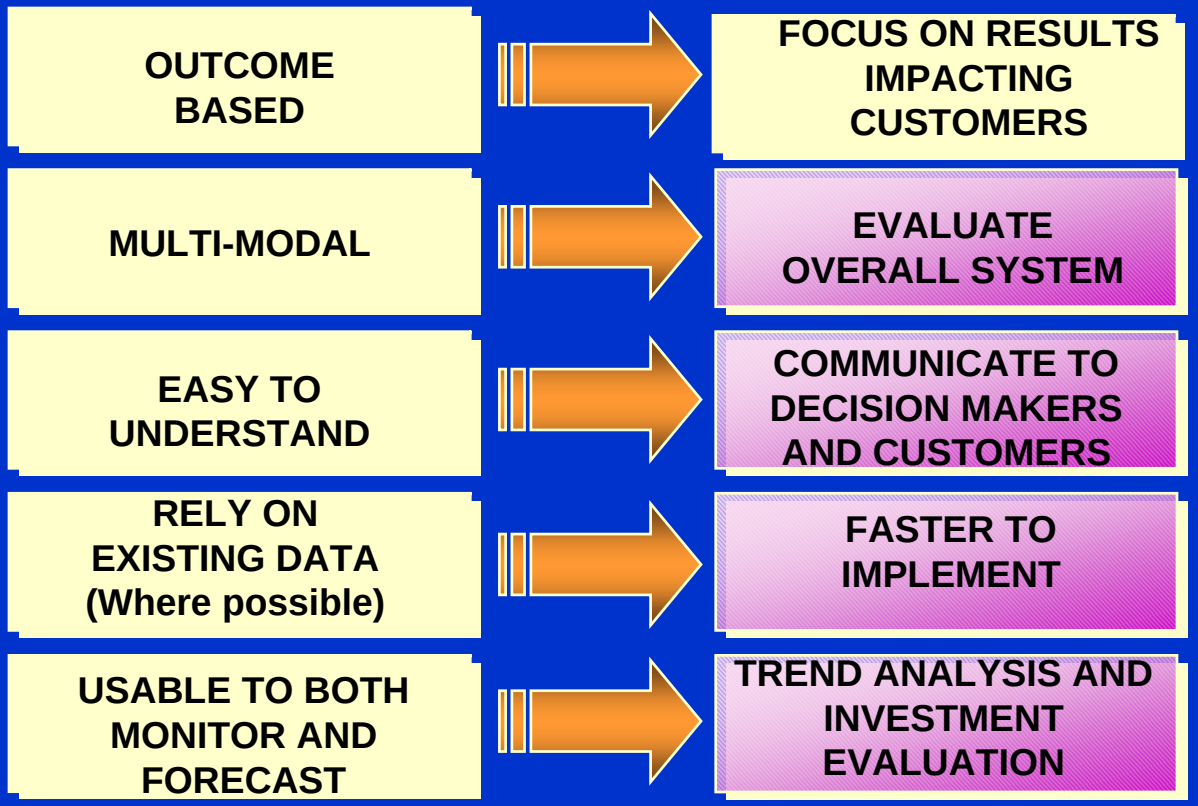
Project Background

How will Caltrans use performance measures?

- Monitor and evaluate system performance.
- Share existing data and future forecast performance information.
- Develop modal-neutral customer and decision information.
- Improve accountability of system development and operations.

Project Background

What are the preliminary project findings?



Project Status

What are Caltrans' nine performance measures?

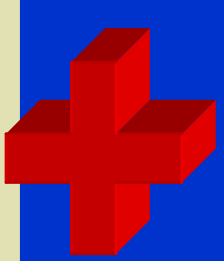
- Mobility and accessibility
- Safety and security
- Cost effectiveness
- Environmental quality
- Reliability
- Economic well-being
- Sustainability
- Equity

Project Status:

How Do Performance Measures Relate to Traditional Data?

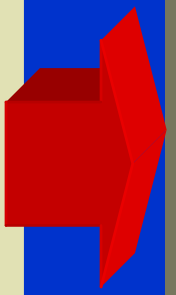
Traditional Data (Outputs)

- Number of lanes
- Lane capacity
- On-time transit performance
- Fares
- Mode shift
- Vehicle miles traveled
- Average speeds
- Speed variations
- Average vehicle occupancy
- Incidents
- Accidents



Performance Indicators

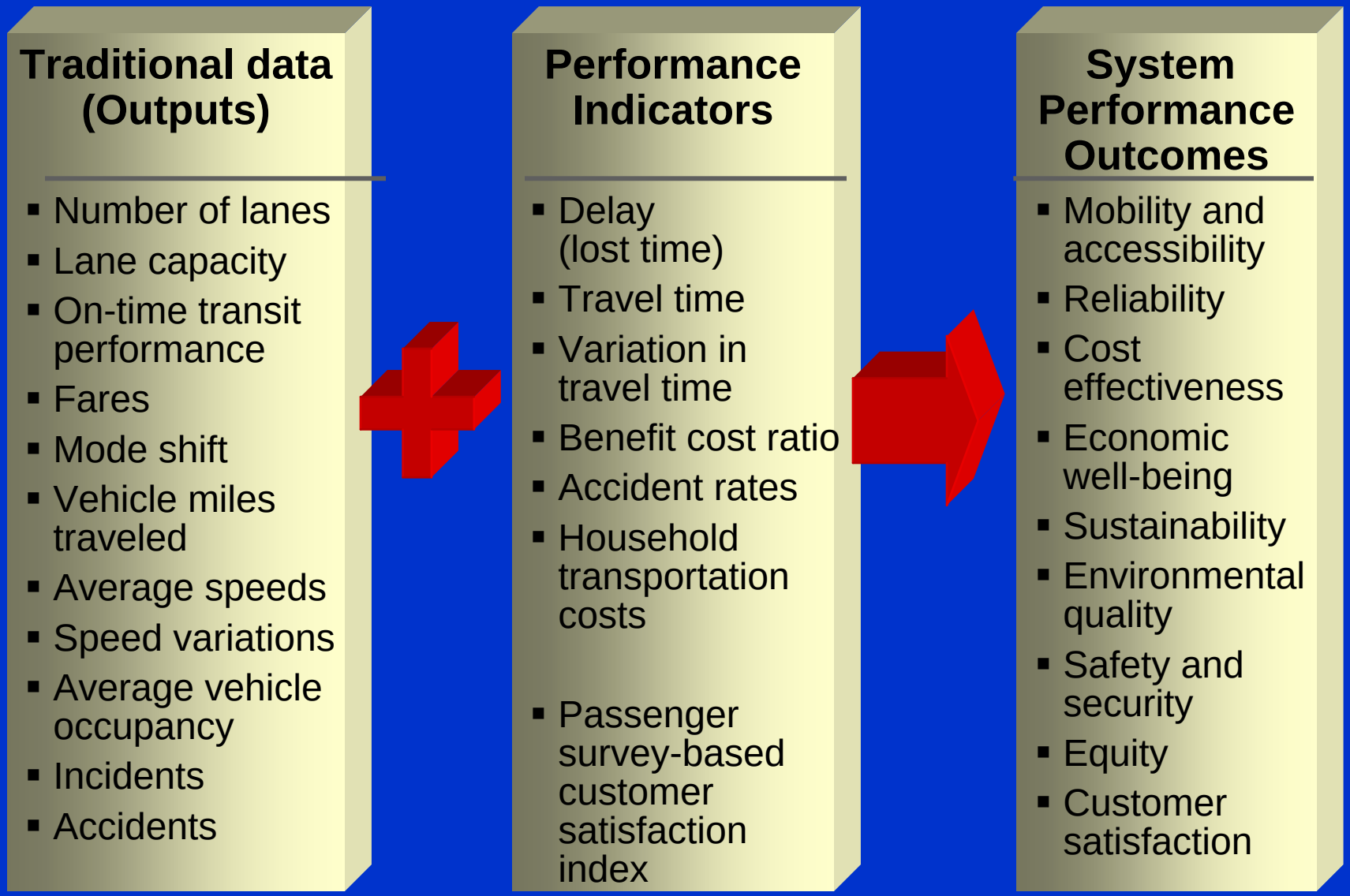
- Delay (lost time)
- Travel time
- Variation in travel time
- Benefit cost ratio
- Accident rates
- Household transportation costs
- Passenger survey-based customer satisfaction index



System Performance Outcomes

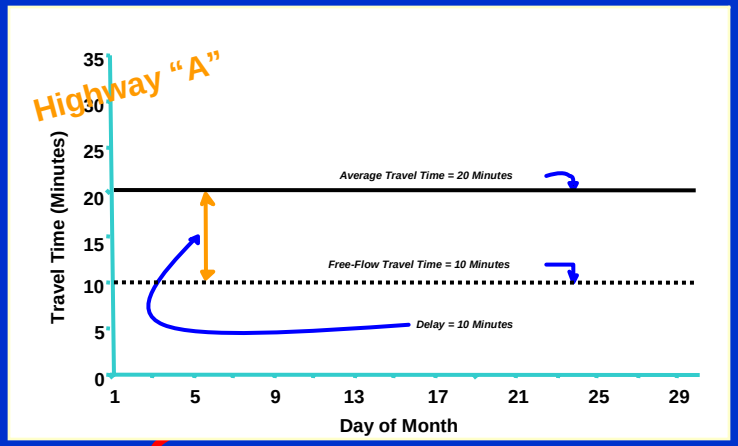
- Mobility and accessibility
- Reliability
- Cost effectiveness
- Economic well-being
- Sustainability
- Environmental quality
- Safety and security
- Equity
- Customer satisfaction

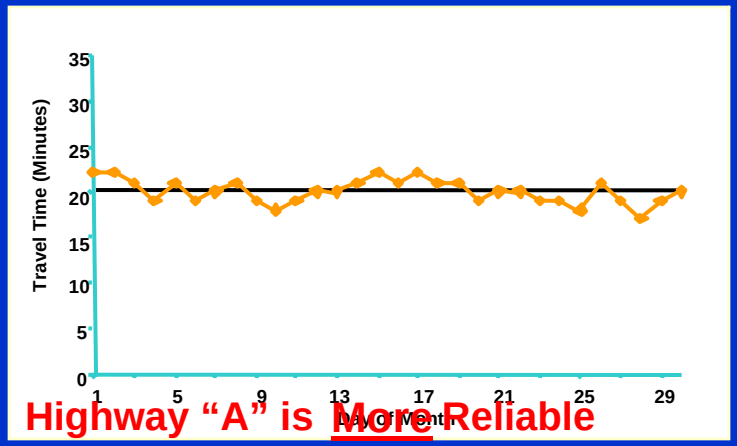
Performance Measures: Making Data Meaningful



Performance Measures: Making Data Meaningful

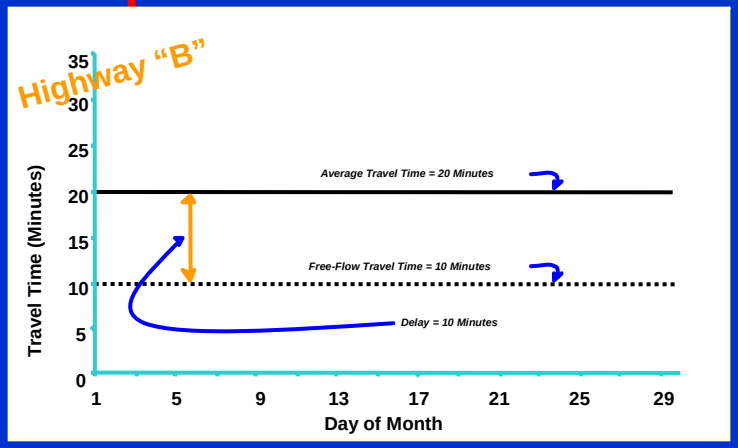
Highway Mobility Versus Highway Reliability



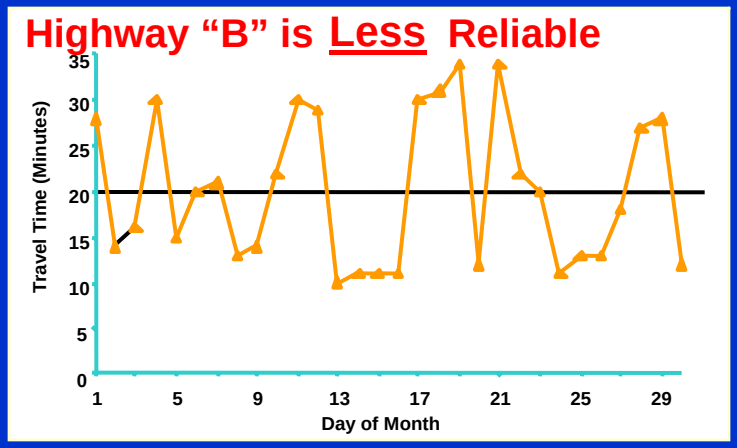


Highway "A" is More Reliable

Same Mobility, but...



Highway "B" is Less Reliable



Performance Measures: Making data meaningful

Transit Delay And Reliability Indicators

Step 1 Compute Optimal Travel Time

Route length: 20 miles

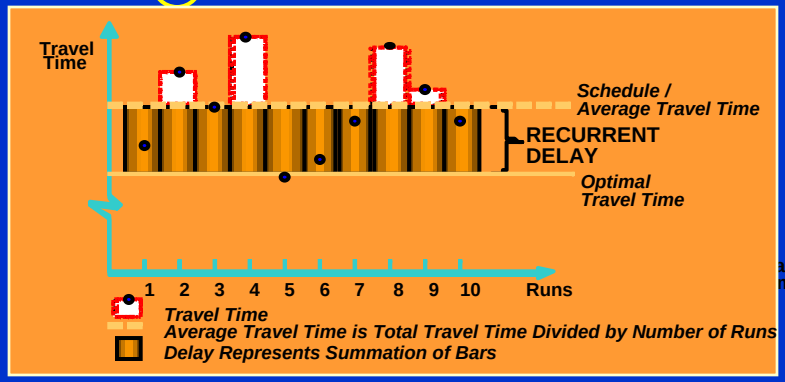
Percent local service: 90%
Percent highway service: 10%
Optimal local speed: 15 mph

Example:

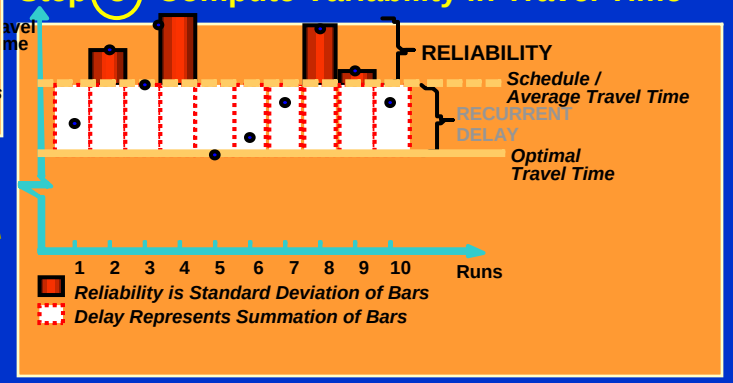
Weighted average optimal speed
= (0.90x15)+(0.10x65)
= 20 mph

Schedule: 75 minutes
Optimal travel time: 60 minutes

Step 2 Plot Actual Travel Time & Calculate Delay



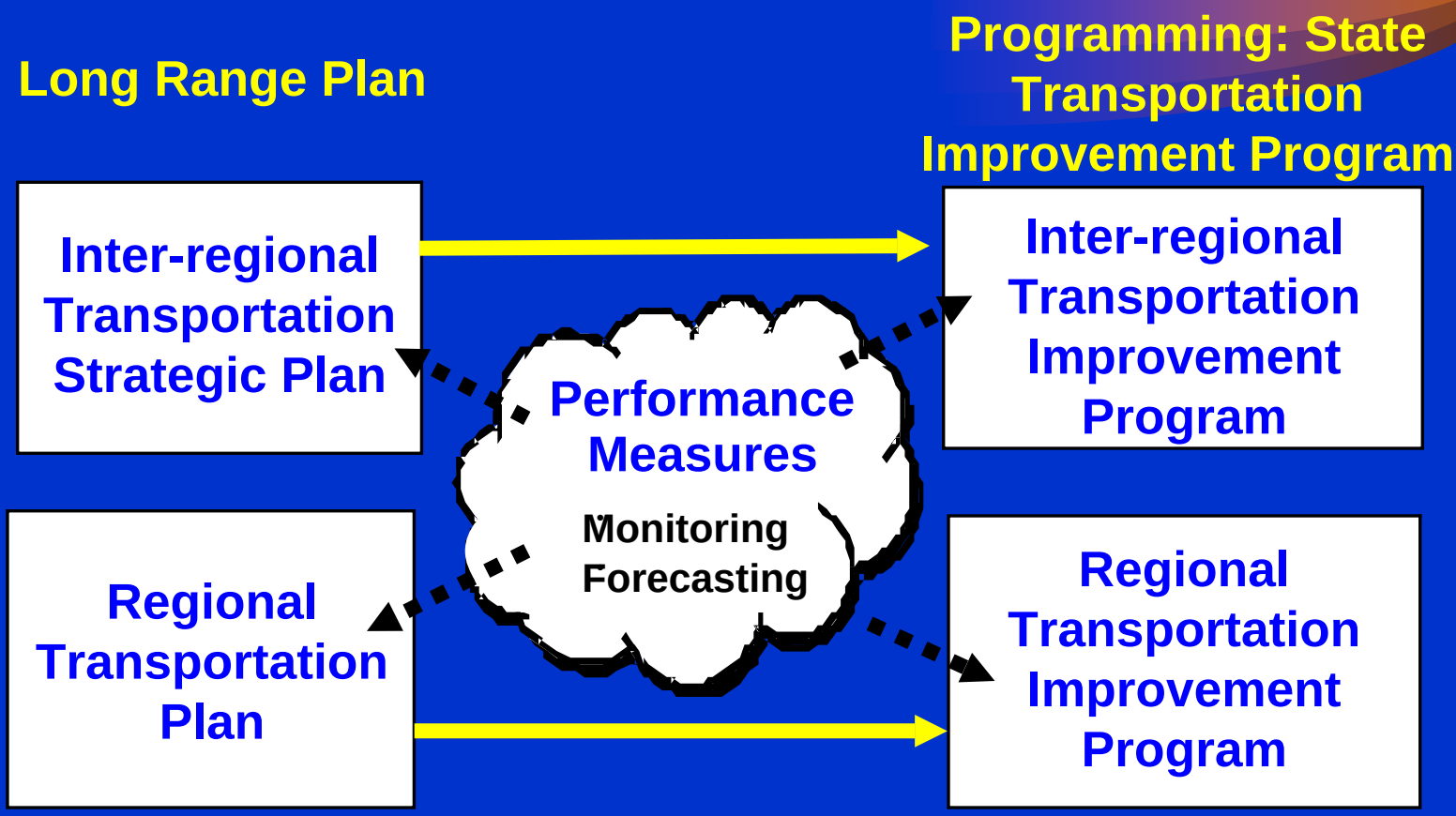
Step 3 Compute Variability in Travel Time



Application of Performance Measures in RTPs?

To become truly effective, performance measures must be integrated into existing planning and programming processes.

Application of Performance Measures in Long Range Plans



Where Are We Going…

In the next three years?

Our Plan: Provide Information and Make It Accessible To All

- Engineering
- Project Management
- Physical features of all modes in the system
- Environmental
- Financial
- Performance of the system